

**Application No. : 10/021,567**  
**Filed : December 12, 2001**

claims as originally filed, and no new matter has been added. Thus, with the addition of Figure 3, applicant respectfully requests that the objection to the drawings under 37 C.F.R. § 1.83(a) be withdrawn.

II. Discussion of Rejection of Claims 1, 3, and 5-10 Under 35 U.S.C. § 103(a)

In paragraph 3 of the Office Action, the Examiner rejected Claims 1, 5, and 6 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,239,373 to Sato et al. in view of Japanese Patent No. 2001-226754 issued to Sakagami et al. (hereinafter referred to as JP '754).

In paragraph 5 of the Office Action, the Examiner rejected Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. in view of JP '754, and further in view of U.S. Patent No. 5,532,910 to Suzuki et al.

In paragraph 7 of the Office Action, the Examiner rejected Claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. in view of JP '754, and further in view of U.S. Patent No. 4,408,089 to Nixon, and in paragraph 8, the Examiner rejected Claims 8 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. in view of JP '754, and further in view of U.S. Patent No. 5,514,837 to Kenny et al. Finally, in paragraph 9, the Examiner rejected Claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. in view of JP '754 and Nixon as applied to Claim 7 above, and further in view of Kenny et al.

The Applicant submits that JP '754 does not qualify as prior art, since the invention of the subject matter of at least rejected Claims 1, 3, 5, 6, 7, 8, 9, and 10 was reduced to practice prior to the effective date of JP '754. In support of this submission, the Applicant has filed herewith a declaration by Hidemichi Fujiwara, the sole inventor, pursuant to 37 C.F.R. § 1.131, whereby Mr. Fujiwara declares that the invention claimed in those rejected claims was reduced to practice prior to August 21, 2001. Consequently, the Japanese reference JP '754 is not available as a prior art reference under 35 U.S.C. § 103(a). The Applicant submits that it would not have been obvious to recognize the invention recited in those rejected claims based solely on the other prior art references cited by the Examiner. The Applicant submits that the rejections of Claims 1, 3, and 5-10 under 35 U.S.C. § 103(a) are thus overcome. Thus, the Applicant submits that Claims 1, 3, and 5-10 are respectfully allowable, and requests that the rejection of those claims be withdrawn.

Application No. : 10/021,567  
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III. Discussion of Rejection of Claims 2 and 4 Under 35 U.S.C. § 103(a)

In paragraph 4 of the Office Action, the Examiner rejected Claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. in view of U.S. Patent No. 4,729,939 to Nishikawa et al.

The Examiner stated that Nishikawa discloses an aluminum alloy "consisting essentially of Zr: 0.03 to 0.4%, Fe: 0.2 to 0.7%, Si: 0.2 to 0.6%, Mg: 0.35 to 1.2%, Cu:0.05 to 0.4%." *Office Action, page 5, second paragraph*. Applicant respectfully disagrees.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 U.S.P.Q. 580.

The automobile power cable of Claim 2 comprises a stranded wire formed of aluminum alloy strands, the aluminum alloy strands "each consisting essentially of: Zr: 0.03 to 0.04 wt.%, Fe: 0.2 to 0.7 wt.%, Si: 0.2 to 0.6 wt.%; Mg: 0.35 to 1.2 wt.%, Cu:0.05 to 0.4 wt.%, ...". Thus, Cu is one of the ingredients, which is added to enhance the heat-resistance of the automobile power cable of Claim 2. In contrast, Nishikawa relates to a photosensitive lithographic printing plate. More specifically, Nishikawa discloses "an aluminum alloy composed of ... Cu 0 to 0.05 wt % ...". *Nishikawa, col. 2, lines 56-63*. Nishikawa teaches that "Cu, Zn, and Ti are unavoidable impurities," and that "Cu in an amount of 0.002 to 0.04 wt % is desirable because it improves the etching performance of the alloy." *Col. 3, lines 50-54*. Even though Cu is part of unavoidable impurities, Nishikawa's Cu is preferably controlled within a range from 0.002 to 0.04% in order to improve the etching performance. Thus, the Cu content range of the invention of Claim 2 is different from that disclosed by Nishikawa. More specifically, Nishikawa discloses controlling Cu for the improved etching performance, while in the invention recited in Claim 2, Cu content is controlled for enhanced heat resistance.

Further, Sato is directed to an end structure for a shielding wire and a method of producing the end structure of the shielding wire, by which it is possible to prevent the terminal portion of a braided wire from being loosened. *Sato at col. 1, ll. 65-67, col. 2, ll. 1-3*. On the other hand, Nishikawa is directed to an aluminum alloy support for lithographic printing plate which is produced by cold rolling an aluminum alloy. *Nishikawa at col. 2, ll. 56-63*. The Applicant submits that the intended purpose and application of Sato's and Nishikawa's inventions are certainly distinct. As a result, one of ordinary skill in the art would have no motivation to combine the teachings of Sato and Nishikawa, as argued by the Examiner. *See*

Application No. : 10/021,567  
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*O.A. at para. 3.* In fact, the Examiner does not point out why or how one of ordinary skill in the art would have had such a motivation to selectively combine the teachings of the references. The Applicant submits that, even if the combination of teachings of Sato and Nishikawa would suggest all the limitations of Claim 2, one of ordinary skill in the art would have had no motivation to so combine. Thus, it would not have been obvious to one of ordinary skill in the art to recognize all the limitations of Claim 2 in view of the collective teachings of Sato and Nishikawa.

In view of the foregoing, the Applicant requests that the rejection of Claim 2 be withdrawn, and respectfully submits it for further review as containing patentable subject matter.

Because Claim 4 (and each of multiple dependent Claims 5-7) depends from Claim 2, pursuant to 35 U.S.C. § 112, ¶ 4, each of such claims incorporates by reference all the limitations of the claim to which it refers. It is therefore submitted that those claims are in condition for allowance at least for the reasons expressed with respect to the independent claim, and for other features.

#### IV. Allowable Subject Matter

In paragraph 10 of the Office Action, the Examiner objected to Claims 11-14 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claims 11 and 12 have been amended to include all of the limitations of the base claim and any intervening claims. Since Claims 13 and 14 depend on Claims 11 and 12, respectively, the Applicant respectfully submits that Claims 11-14 are now in condition for allowance.

#### CONCLUSION

Applicant has endeavored to address all of the Examiner's concerns as expressed in the Office Action. Accordingly, amendments to the claims, the reasons therefor, and arguments in support of patentability of the pending claim set are presented above. Any claim amendments which are not specifically discussed in the above remarks are made in order to improve the clarity of claim language, to correct grammatical mistakes or ambiguities, and to otherwise improve the clarity of the claims to particularly and distinctly point out the invention to those of skill in the art. Finally, Applicant submits that the claim limitations above represent only

**Application No. : 10/021,567**  
**Filed : December 12, 2001**

illustrative distinctions. Hence, there may be other patentable features that distinguish the claimed invention from the prior art.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections and, particularly, that all claims be allowed. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully invited to call the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.


Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated:

December 3, 2002

By:



Mark M. Abumeri  
Registration No. 43,458  
Attorney of Record  
2040 Main Street, 14<sup>th</sup> Floor  
Irvine, CA 92614  
(619) 235-8550

Application No. : 10/021,567  
Filed : December 12, 2001

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION:**

Further, the above-mentioned insulation layer and shield layer may consist of three or two layers, that is, a first insulation layer 2, a first shield layer 2, a second insulation layer 4, second shield layer 13 and a third insulation layer 14 cover the strand wire 1, in the mentioned order (Figure 3).

**IN THE CLAIMS:**

11. (Amended) A terminal for an automobile power cable made of Al alloy which is ~~essentially consisted~~ consisting essentially of:

Zr: 0.03 to 0.4 wt.%,

Si: 0.05 to 0.15 wt.%, and

balance being Al and inevitable impurities;

wherein said terminal for the automobile power cable comprises a cylindrical terminal connected to ~~said a~~ stranded wire in said automobile power cable, ~~as claimed in any one of claims 1 to 4,~~ the stranded wire formed of a plurality of high conductive Al alloy strands each consisting essentially of:

Zr: 0.05 to 0.4 wt.%,

Fe: 0.05 to 0.2 wt %,

Si: 0.05 to 0.2 wt.%,

a total amount of one or at least two kinds selected from a group consisting of Be,

Sr, Mg, Ti and V: 0.003 to 0.05 wt.%, and

balance being Al and inevitable impurities;

at least one insulation layer for covering said stranded wire and at least one shield layer formed of a braid containing more than 99 wt.% of Al;

wherein said terminal is coated over its surface adapted to be made into contact with the stranded wire of the power cable, with a Ni layer, and is formed therein with locking grooves having a depth of greater than 0.1 mm.

12. (Amended) A terminal for an automobile power cable made of Cu alloy which is ~~essentially consisted~~ consisting essentially of:

Zr: 10 to 40 wt.%, and

Application No. : 10/021,567  
Filed : December 12, 2001

balance being Cu and inevitable impurities;

wherein said terminal for the automobile power cable comprises a cylindrical terminal connected to ~~said a~~ stranded wire in said automobile power cable, the stranded wire formed of a plurality of high conductive Al alloy strands each consisting essentially of:

Zr: 0.05 to 0.4 wt.%,

Fe: 0.05 to 0.2 wt.%,

Si: 0.05 to 0.2 wt.%,

a total amount of one or at least two kinds selected from a group consisting of Be, Sr, Mg, Ti and V: 0.003 to 0.05 wt.%, and

balance being Al and inevitable impurities;

at least one insulation layer for covering said stranded wire and at least one shield layer formed of a braid containing more than 99 wt.% of Al;

wherein said terminal ~~as claimed in any one of claims 1 to 4,~~ is coated over its surface adapted to be made into contact with the stranded wire of the power cable, with an Sn layer, and is formed therein with locking grooves having a depth of greater than 0.1 mm.